

# 2006 STATEWIDE MUNICIPAL SOLID WASTE MANAGEMENT UPDATE

## Environmental and Public Protection Cabinet Division of Waste Management

### Executive Summary

#### BACKGROUND

Kentucky has made great strides in the proper management of its solid waste since the late 1960s when the first solid waste legislation was passed. Kentucky Revised Statute (KRS) Chapter 109 enacted in 1966 gave counties the ability to establish “109 boards” to address solid waste issues. Subsequent legislation furthered the development of county authority and responsibility for penalties for non-compliance and development of five-year solid waste plans. The five-year solid waste plans provide for access for all households to garbage collection, cleanup of illegal open dumps and litter, recycling, and solid waste education. Annual progress reports are submitted to the Environmental and Public Protection Cabinet (EPPC) providing the basis for cabinet recommendations to the governor and the General Assembly.

The Kentucky Legislature enacted House Bill (HB) 174 in 2002, establishing the Kentucky Pride Fund with a \$1.75 environmental remediation fee paid on each ton of waste disposed in Kentucky landfills. Funding from the fee is used to characterize orphan landfills and remediate illegal open dumps. Local governments may apply for grant funding for 75 percent of the cost of cleaning illegal open dumps. HB 174 further established an annual transfer of \$5 million for the Transportation Cabinet for litter abatement activities.

The Kentucky Recycling and Marketing Assistance (KRMA) program was established in 1998 to assist local governments in development of recycling infrastructures. Cost for development of recycling programs has always been an issue with local governments. Senate Bill (SB) 50, enacted in 2006, amended HB 174 authorizing a portion of the funding generated through the \$1.75 environmental remediation fee to be used for recycling and household hazardous waste grants. The first recycling grants were awarded in June 2007. The cabinet anticipates growth in recycling infrastructures due in large part to the funding authorized by the General Assembly and the support of local governments.

#### ACHIEVEMENTS

- *Illegal open dumping declines* -- Illegal open dumping has declined 77 percent since 2000. More than 23,500 illegal open dumps have been cleaned since 1993 at a cost of over \$59.7 million dollars, an average cost of \$2,540 per dumpsite. There were 150 fewer dumps identified in 2006 than in 2005.
- *Litter along public roads decreases* -- The Kentucky Pride fund, Eastern Kentucky PRIDE, Bluegrass PRIDE, Transportation Cabinet, Adopt-A-Highway and cities and counties contributed to the cleanup of 12,921,060 pounds of litter at a cost of \$8.4 million during 2006 – more than 1.7 million pounds less than in 2005. The average cost per pound of litter picked up is 65 cents.
- *Recycling increases* -- Kentuckians recycled 27 percent of common household recyclables (aluminum, cardboard, steel, plastic, newspaper, glass and paper), an increase of 5 percentage points over 2005. Kentuckians recycled 33 percent of all municipal solid waste in 2006, which included sludge, concrete, compost and asphalt in addition to the common household recyclables.

- *Curbside collection increases* -- Participation in curbside garbage collection continues to slowly increase. The requirement for waste haulers and recycling haulers to register and report to each county provides a more accurate report for curbside collection. The 2006 statewide household participation rate for all collection types is 87.79 percent.
- *Waste Tire Program reauthorized* -- The Waste Tire Trust Fund was reauthorized in the 2006 General Assembly and will be in effect until July 31, 2010. The recycled tires are beneficially reused for purposes such as tire-derived fuel and crumb rubber for athletic fields and schools and community parks. From June to December 2006, Kentucky recovered more than 185,000 passenger tire equivalent.
- *Crumb rubber grants awarded* -- In 2006, the Waste Tire Trust Fund awarded 45 grants totaling \$1,473,459 to assist schools and communities in projects using crumb rubber from waste tires for athletic fields, gyms, parks and community playgrounds.
- *The cabinet continues to make recycling a priority for the state:*
  - The 2006 General Assembly expanded the Kentucky Pride Fund to include recycling infrastructure development and household hazardous waste management /collection programs. The cabinet spent the remainder of 2006 developing the first recycling grant application to be awarded in June 2007.
  - Electronic scrap (e-scrap) collection events held in several counties resulted in a permanent e-scrap drop-off collection program for Boyle County.
  - Six counties entered into Memorandums of Understanding (MOUs) to utilize the glass pulverizer purchased by the cabinet and collected 55 tons of pulverized glass aggregate.
- *The Division of Waste Management's state government office paper recycling program thrives* – The government office paper recycling program serves more than 115 building locations in Frankfort collecting office paper, computer paper, newsprint and cardboard. More than 3,773,390 pounds were recycled in 2006, an increase of 58 percent over 2005. The increase is in large part due to a backlog created during the transition to a new building for the office paper recycling program. The shredding of confidential documents provides a zero cost alternative to state and local governments.

## CONCLUSIONS

While solid waste issues continue to plague Kentucky through newly-created open dumps and roadside litter, progress is visible. Illegal open dumping declined 77 percent since 2000, recycling of common household items increased 5 percent, while litter along public roads decreased 12 percent in 2006.

With the influx of funding from the Kentucky Pride Fund, continued declines in illegal open dumping and litter and increases in recycling alternatives are attainable.

## **RECOMMENDATIONS**

Promote market development to add end users to Kentucky and increase economic development opportunities for recyclables.

Provide household hazardous waste (HHW) collection programs through the Kentucky Pride Fund to increase the awareness of more responsible recycling and disposal options for items such as mercury thermometers and thermostats, paints and other household hazardous wastes in our homes.

Develop pilot project to increase paper recycling within state government. Recycling waste paper is beneficial to the environment and a savings of taxpayer dollars. Our goal is for Kentucky state government to be No. 1 nationally in paper recycling.

Continue efforts through education and enforcement to prevent illegal open dumping and littering and to provide funding to reduce the number of illegal open dumps and the effects of littering.

## **STATEWIDE MUNICIPAL SOLID WASTE MANAGEMENT UPDATE**

### **Environmental and Public Protection Cabinet**

#### **Division of Waste Management**

#### **Solid Waste, A Decade and Beyond**

The cabinet has monitored solid waste statistics for more than a decade, since 1993. Despite the 25 percent reduction goal established in Senate Bill (SB) 2, the amount of waste disposed in Kentucky's landfills has increased an average of 17 percent since 1993. While House Bill (HB) 174, enacted in 2002, did not continue the 25 percent reduction goal initiated in Senate Bill 2, it did establish policies to limit and reduce the amount of solid waste disposed through the reduction in the amount of waste generated. The bill also encouraged recycling, yard waste composting, and resource recovery.

The average amount of out-of-state waste disposed in Kentucky landfills has increased over 150 percent, while Kentucky waste has an average increase of 10 percent since 1993. The leading causes for the increase in waste disposed are:

- inexpensive disposal fees in Kentucky,
- increased awareness of proper waste disposal,
- less illegal open dumping,
- an increase in out-of-state trash,
- the lack of recycling education,
- fragmented community recycling programs, and
- population increase.

Kentucky's recycling rate on common household items (aluminum, cardboard, steel, plastic, newspaper, glass and paper) continues to improve showing an increase from 22 percent in 2005 to 27 percent in 2006. Kentucky's recycling rate is above the Southeast Regional average of 22 percent and is just below the national recycling average of 28.5 percent. With the establishment of grants for the development and expansion of recycling programs and household hazardous waste management, authorized through Senate Bill 50, and the recycler reporting requirements, authorized through House Bill 174, Kentucky's recycling rates should continue to increase and set the example for other states.

The average cost in 2006 for waste disposed at Kentucky landfills was \$29.21 per ton, still considerably less than surrounding states. Chart No. 1 illustrates the comparison of tonnages of in-state, out-of-state and the combined total of municipal solid waste received at landfills and the amount in tons of recycled materials in Kentucky, beginning with the base year 1994. Chart No. 2 displays the actual numbers referred to in Chart No. 1.

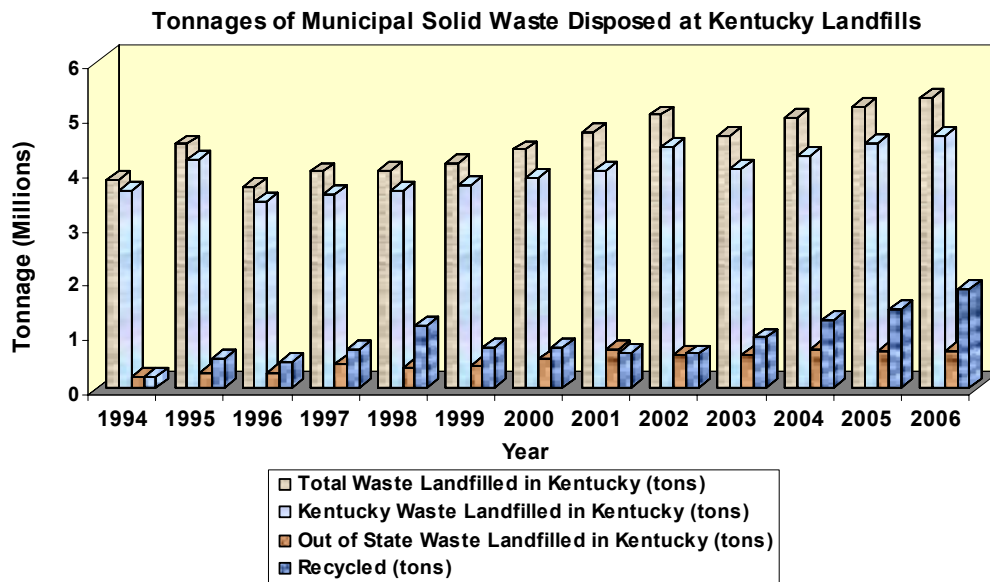


Chart No. 1

Year	Total Waste Landfilled in Kentucky (tons)	Kentucky Waste Landfilled in Kentucky (tons)	Out of State Waste Landfilled in Kentucky (tons)	Recycled (tons)	Percentages Nationally	Percentages Kentucky
1994	3,813,365	3,621,623	191,742	191,684	23%	5%
1995	4,476,904	4,207,071	269,833	529,423	27%	11%
1996	3,700,832	3,429,983	270,849	474,415	28%	12%
1997	3,972,746	3,543,196	429,550	685,650	30%	16%
1998	3,989,181	3,615,890	373,291	1,150,620	31.5%	24%
1999	4,130,796	3,734,798	395,998	739,136	33%	16%
2000	4,375,652	3,860,516	515,136	742,398	32%	16%
2001	4,683,702	3,982,260	701,442	644,925	*	13%
2002	5,014,407	4,415,859	598,548	615,476	26.7%	12%
2003	4,642,560	4,036,800	605,760	919,802	*	18% **
2004	4,961,476	4,259,181	702,295	1,237,294	*	22% **
2005	5,157,185	4,493,499	663,686	1,429,490	30.0%	22%
2006	5,317,765	4,636,351	681,414	1,793,346	28.5%	27%

NOTE: 2003 landfill waste disposal data may not be accurate due to a changeover of computer systems.

\* National data is not available for 2001, 2003, and 2004 percentages.

\*\* 2003 and 2004 Kentucky percentage increases are partially attributable to better data, due to a new state law that took effect mid-2002 requiring recyclers to register and report amounts and types of materials recycled. Kentucky municipal solid waste recycled figures are for: aluminum, cardboard, steel, plastic, newsprint, glass and paper.

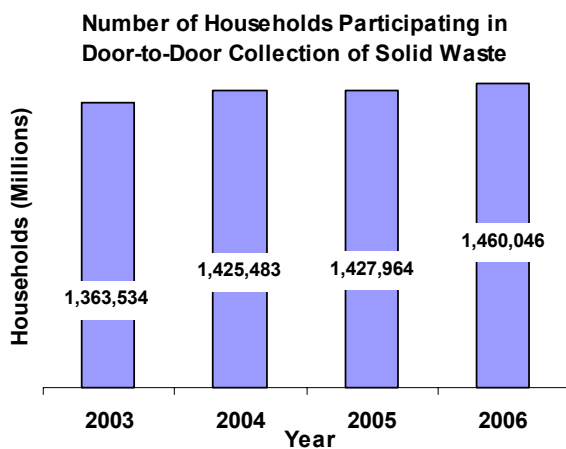


Chart No. 2

## Factors Affecting Increase in Municipal Solid Waste Collection

### Municipal Solid Waste Collection Programs

From 1993 to 2002, the number of households participating in door-to-door collection increased from 1,014,699 to 1,335,640, an increase of 31 percent. Chart No. 2 shows the continued increase in number of households participating in some form of a collection system from 2003 to 2006.

The 2006 collection participation rate is 87.79 percent, which means an estimated 203,012 households (12.21 percent) are disposing of their garbage illegally or are not accounted for by current tracking methods. Self-haul to a transfer station or convenience center is a legal method of disposal. However, most counties have difficulty tracking customers to these type facilities.

All counties met the July 1, 1994, statutory deadline for establishing universal collection programs. These programs make collection available to households in the form of curbside collection or self-haul to a convenience center, transfer station, or contained landfill, but KRS 224.43-315 does not require citizens to participate. Thirty-seven counties have passed mandatory collection ordinances. Some counties with mandatory collection have low participation rates due to a lack of enforcement. The primary system for 115 counties is door-to-door curbside collection.

Beginning October 1, 2003, waste haulers and recyclers were required to register and beginning March 1, 2004, report to the counties annually. The success of waste hauler reporting requirements is demonstrated in an increase from 1,363,534 to 1,460,046 households participating in waste collection, an increase of 7 percent since 2003.

## Cleanup of Illegal Open Dumps

From 1993 to 2002, approximately 20,000 illegal open dumpsites were cleaned at a cost of \$45.4 million.

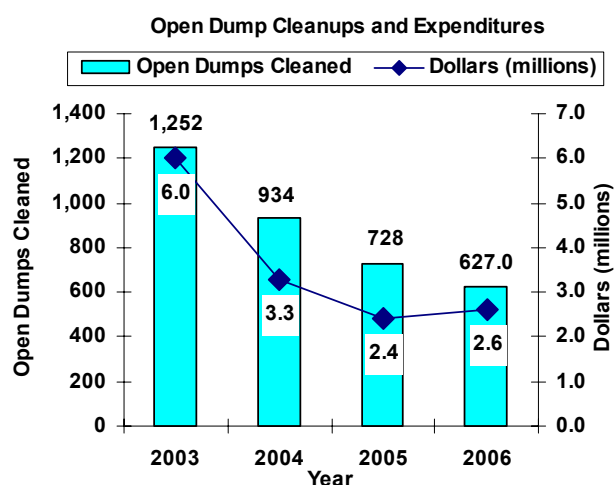


Chart No. 3

Chart No. 3 shows a continued decline in illegal dumping since 2003. In 2006, counties cleaned 627 illegal open dumps at a cost of \$2.6 million.

Enforcement is essential to prevent recurrence of illegal open dumping, but most counties don't have adequate solid waste staff. One hundred and thirteen counties have solid waste coordinators; 52 are part time and 61 are full time while most have more than one job. HB 174 aids counties in cleaning illegal open dumps with funding provided by the \$1.75 remediation fee. Requirements to receive funding for illegal open dump cleanup include the employment of a solid waste coordinator with enforcement powers.

From 1993 to 2002, the number of new dumpsites identified by counties declined 52 percent. Chart No. 4 shows a continued decline in illegal open dumping from 1,159 identified in 2003 to 425 in 2006, an approximate 64 percent decline. The decline is due in part to a more detailed definition of an illegal open dump in 401 KAR 49:080. An illegal open dump is the disposal of waste at an unpermitted facility and is equal to or greater than two (2) consolidated cubic yards of solid waste.

The illegal open dump grant program initiated through HB 174 continues to be successful in the cleanup of illegal open dumps. Funding from HB

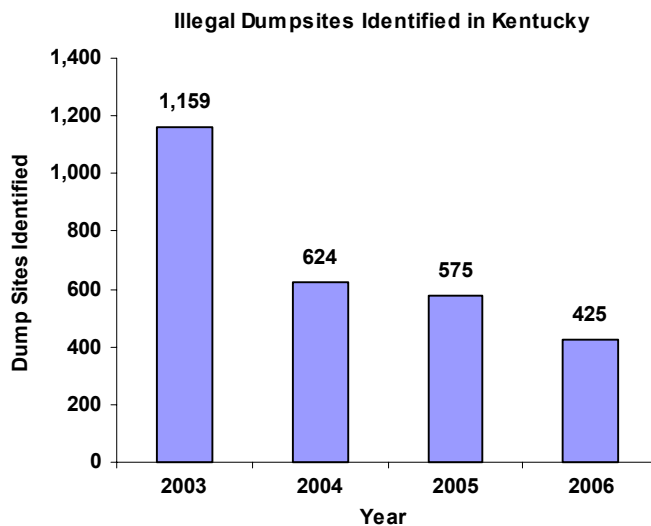


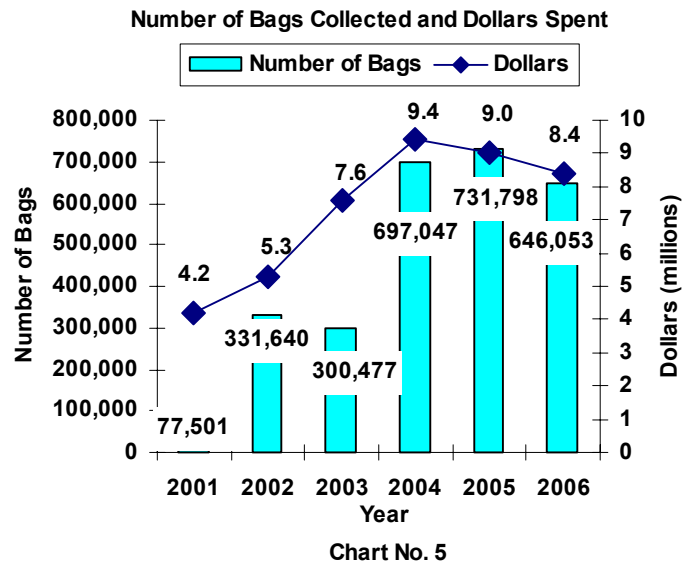
Chart No. 4

174 has cleaned over 500 dumps at approximately \$1.6 million. The third round of illegal open dump grants was awarded in June 2006 for the remediation of 475 dumpsites at a cost of almost \$2.9 million.

## Litter Abatement

The division began tracking the cost of litter activities and the number of bags of litter collected in 2001. State litter grant funds (Kentucky Pride Fund) began in fiscal year 2002. The cabinet receives \$5 million annually from the Transportation Cabinet for distribution to counties and incorporated cities for litter abatement activities.

The success of litter abatement campaigns across the commonwealth is evident in the amount of litter being picked up along roadways. In 2006, more than 24,000 roadways were cleaned collecting nearly 86,000 fewer bags of litter than in 2005, a 12 percent decrease in bags collected. In 2006, counties cleaned more than 142,000 miles of roadways collecting more than 646,000 bags of litter. Collection costs totaled \$8,421,144, an average cost of 65 cents per pound. The influx of funding through the Kentucky Pride Fund and the Eastern Kentucky PRIDE and Bluegrass PRIDE funds have combined to significantly increase the amount of county funds expended to control and clean up litter along public roads. Chart No. 5 reflects the number of bags of litter collected and the amounts spent on litter for the calendar years 2001-2006.



## The Great American Cleanup

The Great American Cleanup, sponsored by Keep America Beautiful, runs March through May annually. The three-month period includes the cleanups sponsored by Commonwealth Cleanup Week (proclaimed the last week of March by the 1998 legislature), Eastern Kentucky PRIDE and Bluegrass PRIDE.

The theme for the 2006 Commonwealth Cleanup was “*Unbridled Spirit – Beauty Unbound.*” The success of Commonwealth Cleanup Week is the combined efforts of city and county governments, individuals, businesses, non-profit groups and various state agencies promoting Kentucky’s unbound beauty. Since the 1998 House Joint Resolution establishing Commonwealth Cleanup Week as the last week in March, more than 133,752 volunteers have pitched in to cleanup Kentucky’s roadways and hillsides.

Eastern Kentucky PRIDE and Bluegrass PRIDE designate a week in April for cleanups. The Waste Tire Trust Fund allocates funds to assist in tire recycling for tires found along roadsides and as a result of illegal open dump cleanup cleaned during Commonwealth Cleanup Week. The Great American Cleanup results (March – May) are listed below for the calendar years listed.

Year	Participating Counties	People	Dumps Cleaned	Miles Cleaned	Tons Recycled	Bags of Trash	Number of Appliances	Tons of Trash Disposed	Tires Recycled/ Disposed
2003	91	23,218	171	1,289	713	59,885	6,030	6,606	85,535
2004	89	10,517	366	3,514	1,525	46,725	3,338	5,074	183,780
2005	50	31,239	88	3,652	881	89,652	5,599	2,500	264,590
2006	34	6,381	38	2,016	369	19,061	1,189	1,054	34,340

## Enforcement

In 1997 the cabinet began an emphasis on enforcement of illegal open dumping. Enforcement and education alerts citizens to proper management of solid waste. These efforts result in the creation of fewer illegal open dumps. Since February 1997, state inspectors have issued 5,166 Notices of Violation (NOVs) to illegal open dumpers. The total cases sent to Division of Enforcement is 1,411. Additionally, county solid waste coordinators statewide have increased the prosecution of illegal open dumping, littering, non-payment of garbage bills and non-participation in a county's mandatory collection system.

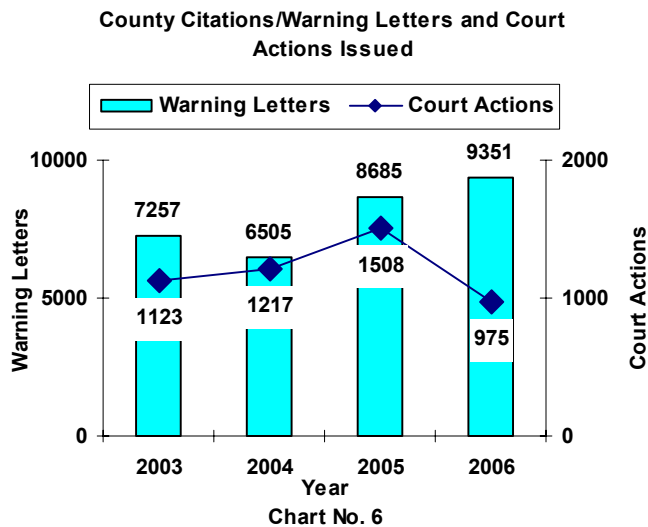
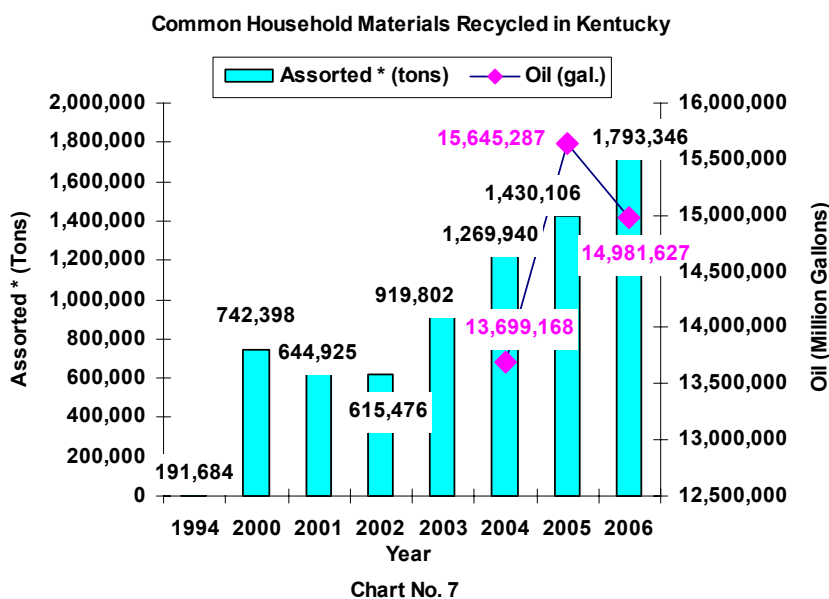


Chart No. 6 shows the number of county issued citations and warning letters and subsequent court actions for the calendar years 2003 – 2006.

## Education

Virtually all counties provide some level of solid waste education to adults and children alike. Counties conduct local activities through schools, radio, newspapers, television, brochures, fairs, contests, etc. Civic groups, extension service, homemakers clubs, school groups, Department for Environmental Protection inspectors and local nonprofit organizations all provide support through local involvement in solid waste education activities.

The cabinet hosts solid waste training and education workshops twice a year for county solid waste coordinators, area development district staff, environmentalists, elected officials and interested citizens. State staff also provides assistance and ensures compliance through annual site visits to all counties, monthly newsletters, daily phone calls and correspondence.



### County Recycling and Recycling Education Programs

County recycling data illustrates a steady increase in the statewide recycling rates of common household items such as glass, aluminum cans, newspaper, mixed and white office paper, cardboard, metal and plastics since 2002. Chart No. 7 reflects the amount in tons of common household items and oil recycled in Kentucky since 2000.



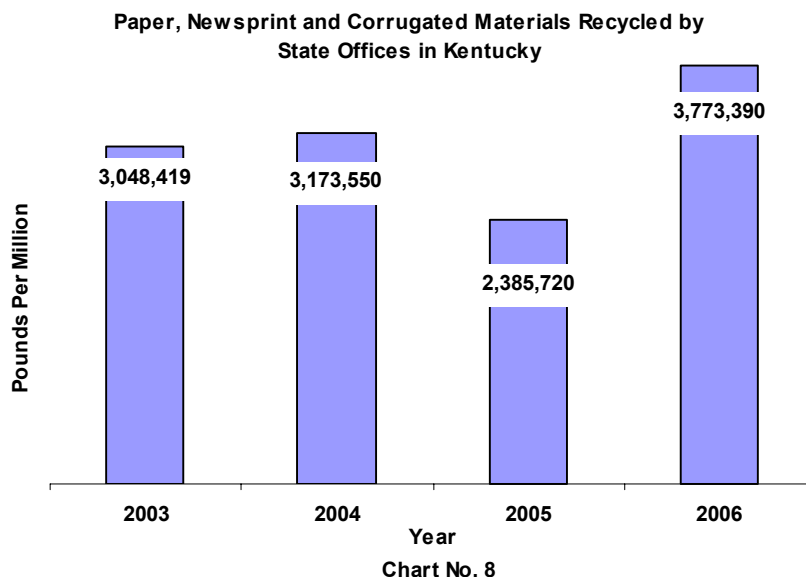
Beginning March 1, 2004, HB 174 required recyclers to report annually to the county the amount of municipal solid waste collected for recycling by volume, weight, or number of items and the type of items recycled. The continued increase in recycling rates is evidence of the success of the counties' registration and reporting to more accurately reflect the recycling efforts statewide.

SB 50 enacted in 2006 amended the Kentucky Pride Fund to provide grants for the development and expansion of recycling programs and household hazardous waste management. The first recycling grants were awarded in June 2007. The influx of recycling grants and education efforts by local governments should result in continued increases in recycling rates.

### State Recycling Programs

The Division of Waste Management, Government Recycling Section continues to operate the state paper recycling program. Office paper represents 80 percent of the waste stream in the office environment. The cabinet has been tracking the amount of governmental waste paper recycled since 1993. From 1993-2002, more than 31 million pounds of waste paper was recycled saving taxpayers over \$500,000, while generating average revenue of \$100,000 per year. The paper recycling program has grown from one man and a Chevy Luv truck to a self-sustaining program with seven full-time employees.

Currently, we serve more than 115 building locations in Frankfort collecting white and colored ledger paper, mixed paper, computer paper, newsprint and corrugated paper. For calendar year 2006, government offices recycled 3,773,390 pounds (1,886 tons) of paper, newsprint and cardboard, a 58 percent increase over 2005. This increase is due in part to a backlog of paper collected during an operation shutdown while moving to a new recycling facility in 2005. Chart No. 8 reflects the millions of pounds of governmental waste paper recycled for calendar years 2003–2006.



### Kentucky Recycling and Marketing Assistance Program (KRMA)

The KRMA program initiated plans to implement the provisions of SB 50, enacted July 2006, which provides grant funding from the Kentucky Pride Fund to improve the state's recycling infrastructure. The glass pulverizer loan program is a means of encouraging the use of pulverized glass aggregate (PGA) in road and other construction projects. Six counties entered into MOUs to borrow the pulverizer and produced 55 tons of PGA.

Two e-scrap workshops were conducted addressing reuse recycling and regulatory issues pertaining to e-scrap. An e-scrap collection event was conducted in conjunction with Calloway County's "Make a Difference Day." In addition, an e-scrap collection event was conducted in Boyle County in partnership

with the county and the Kentucky Pollution Prevention Center (KPPS) which resulted in a permanent e-scarp drop-off program for that area.

The Kentucky Recycling Interest Group (KRIG), composed of industry, government, and environmental interests, was created to foster discussion on what the state can do to promote better recycling and facilitate the movement of recyclable materials from the consumer to the producer/end user.

KRMS staff continue to monitor and provide information in response to perpetual proposed legislation (HB 574 in 2006) to change Kentucky's plastic resin coding statute, encourage regionalization of recycling infrastructure and provide technical assistance through meetings, presentations, workshops and site visits.

### **Waste Tire Trust Fund**

Money for the Waste Tire Trust Fund comes from a \$1 fee charged on the sale of all new replacement motor vehicle tires sold in Kentucky. The Waste Tire Trust Fund was reauthorized in the 2006 General Assembly and will be in effect until July 31, 2010. A schedule was developed to implement a third round of waste tire amnesty events. The third round was initiated in the fall of 2006 with the five counties in the Gateway Area Development District. There were 185,930 passenger tire equivalents (PTEs) collected and recycled into products including tire-derived fuel (TDF) and crumb rubber used on athletic fields, playgrounds, and landscaping mulch.

Wickliffe Fine Papers was granted \$750,000 for development, testing, and use of TDF at its paper mill in western Kentucky. During its first quarter of operation (Fall 06), the facility used approximately 1,000 tons of TDF. Owensboro Municipal Utilities continues to use approximately 10,000 tons of TDF purchase from Kentucky suppliers. Discussion was initiated with a Kentucky road-paving contractor for the use of recycled tire rubber material in asphalt.

### **Crumb Rubber Grants**

Since 2004 the cabinet has awarded grants to local government and schools for the use of crumb rubber made from recycled tires on athletic fields and playgrounds. Funding for the crumb rubber grants comes from the Waste Tire Trust Fund. Forty-five grants totaling \$1,473,459 were awarded for projects to be completed during calendar year 2006.